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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/514,451	02/25/2000	Anand G. Dabak	TI-28997	7626

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EXAMINER

FERRIS, DERRICK W

ART UNIT PAPER NUMBER

2663

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11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/514,451	Applicant(s) DABAK, ANAND G.	
	Examiner Derrick W. Ferris	Art Unit 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☒ Claim(s) 7, 11, 14, 21, 25, 28, 35, 39, 42, 49, 53, 56, 63, 67 and 70 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims rejected are 1-6,8-10,12,13,15-20,22-24,26,27,29-34,36-38,40,41,43-48,50-52,54,55,57-62,64-66,68 and 69.

DETAILED ACTION

Response to Amendment

1. **Claims 1-70** as filed are still in consideration for this application.
2. Examiner **withdraws** the obviousness rejection to *Bevan* in view of *Hottinen* and *Alamouti* for Office action filed **01/12/04**. In addressing applicant's arguments in the response filed **04/06/04**, applicant specifically argues the combinability of references. In particular, applicant argues the further limitation of selecting one of the transmitters in addition to the limitation of transmit diversity as previously pointed out by the examiner. Applicant's claimed invention is essentially a closed-loop (i.e., feedback) system where one (or not all) of the transmitters is selected based on quality measurements of each of the signals. In the prior rejection, the examiner pointed out that *Hottinen* cured the deficiency of transmit diversity and selection where both a non-transmit diversity system as proposed by *Bevan* and a transmit diversity system as proposed by *Hottinen* co-existed with respect to the limitation determining which of the plurality of remote transmitters use transmit diversity. Applicant argued the combination of references by further pointing out that figure 5 and column 8, lines 15-29 of *Bevan* points out that the advantage of *Bevan* is found in selecting signals from two different transmitters 72 and 74 rather than two signals from a single transmitter in reference to figure 5 of *Bevan*. As such, applicant raises issues on how the references may be combined to meet the limitations of the claims. Rather than argue the combinability of the references, the examiner has simplified the above argument by taking a slightly different approach. In particular, the argument is simplified by stating that which of the plurality of remote transmitters use transmit diversity is inherent in a transmit diversity system (see rejection below). Examiner, however,

would like to point out the allowance of the further limitation clarifying how transmit diversity is determined through the use of a list.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. **Claims 1, 4-6, 9, 10, 13, 15, 18-20, 23, 24, 27, 29, 32-34, 37, 38, 41, 57, 60-62, 65, 66, and 69** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,131,016 A to *Greenstein et al.* (“*Greenstein*”).

As to **claim 1**, *Greenstein* discloses a transmit diversity system with feedback for an OFDM system, e.g., see Abstract. As such, see figure 1 with respect to a transmit diversity system. With respect to the limitation “receiving a plurality of signals from a plurality of remote transmitters” see figure 2a where the transmitters are 202 and 203 (e.g., see column 4, lines 1-11). *Greenstein* also teaches “calculating a signal strength of

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each respective signal of the plurality of signals”, see e.g., column 4, lines 53-67. A selection process is also performed in “selecting one of the remote transmitters in response to the steps of determining and calculating” as part of a first embodiment, see e.g., column 4, line 53 – column 5, line 7. What may be at issue is the limitation “determining which of the plurality of remote transmitters use transmit diversity”.

Examiner notes the above-limitation is inherently taught by the reference since only those transmitters using transmit diversity send tone signals.

As to **claim 4**, see e.g., column 3, lines 1-12.

As to **claim 5**, see e.g., column 3, lines 1-12.

As to **claim 6**, see e.g., column 3, lines 1-12.

As to **claim 9**, see similar rejection to claim 1.

As to **claim 10**, see similar rejection to claim 4.

As to **claim 13**, see similar rejection for claim 1.

As to **claim 15**, see similar rejection for claim 1.

As to **claim 18**, see similar rejection for claim 4.

As to **claim 19**, see similar rejection for claim 5.

As to **claim 20**, see similar rejection for claim 6.

As to **claim 23**, see similar rejection for claim 9.

As to **claim 24**, see similar rejection for claim 10.

As to **claim 27**, see similar rejection for claim 13.

As to **claim 29**, see similar rejection for claim 1.

As to **claim 32**, see similar rejection for claim 4.

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As to **claim 33**, see similar rejection for claim 5.

As to **claim 34**, see similar rejection for claim 6.

As to **claim 37**, see similar rejection for claim 9.

As to **claim 38**, see similar rejection for claim 10.

As to **claim 41**, see similar rejection for claim 13.

As to **claim 57**, see similar rejection for claim 1.

As to **claim 60**, see similar rejection for claim 4.

As to **claim 61**, see similar rejection for claim 5.

As to **claim 62**, see similar rejection for claim 6.

As to **claim 65**, see similar rejection for claim 9.

As to **claim 66**, see similar rejection for claim 10.

As to **claim 69**, see similar rejection for claim 13.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 2, 3, 8, 12, 16, 17, 22, 26, 30, 31, 36, 40, 58, 59, 64 and 68** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,131,016 A to *Greenstein et al.* ("*Greenstein*") in view of "A Strength and SIR Combined Adaptive Power Control for CDMA Mobile Radio Channels" to *Yang et al.* ("*Yang*").

In making a proper obviousness rejection under MPEP 706.02(j), the examiner will address the following four steps:

- a) *the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line numbers where appropriate;*
- b) *the difference of differences in the claim(s) over the applied cited references;*
- c) *the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter; and*
- d) *an explanation why one skilled in the art at the time of the invention was made would have been motivated to make the proposed modification.*

As such to **claim 2**, for step (a) *Greenstein* discloses comparing the strength of the pilot tones (i.e., signal strength), see e.g., column 4, lines 52-67.

For step (b) *Greenstein* is silent or deficient to the further limitation using signal-to-interference ratio (SIR).

Yang teaches the further recited limitation above at e.g., Abstract.

For step (c), the proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Greenstein* by clarifying that signal strength as taught by *Greenstein* further includes SIR.

In order to establish a prima facie case of obviousness for step (d), three basic criteria must be met. The three criteria according to MPEP 706.02(j) are as follows:

First there must be some suggestion or modification, either in the reference(s) themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

As such, for step (d) examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the further limitation using signal-to-interference ratio (SIR). In particular, the motivation for modifying the

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reference or to combine the reference teachings would be to use SIR since SIR is signal strength and SIR yields better quality of service and capacity. In particular, *Yang* cures the above-cited deficiency by providing a motivation found at e.g., top left column at page 1168. Second, there would be a reasonable expectation of success since both references disclose closed loop power systems and signal strength. Thus the references either in singular or in combination teach the above claim limitation.

As to **claim 3**, see e.g., column 4, lines 53-67 of *Greenstein*.

As to **claim 8**, *Greenstein* is silent or deficient to using a threshold. *Yang* teaches a threshold, see e.g., Section II of *Yang* which teaches thresholds for both signal strength and SIR. Examiner notes a similar obviousness rejection as claim 2 where the motivation is still a closed-loop system.

As to **claim 12**, see similar rejection for claim 2.

As to **claim 16**, see similar rejection for claim 2.

As to **claim 17**, see similar rejection for claim 3.

As to **claim 22**, see similar rejection for claim 8.

As to **claim 26**, see similar rejection for claim 12.

As to **claim 30**, see similar rejection for claim 2.

As to **claim 31**, see similar rejection for claim 3.

As to **claim 36**, see similar rejection for claim 8.

As to **claim 40**, see similar rejection for claim 12.

As to **claim 58**, see similar rejection for claim 2.

As to **claim 59**, see similar rejection for claim 3.

As to **claim 64**, see similar rejection for claim 8.

As to **claim 68**, see similar rejection for claim 10.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 43, 46-48, 51, 52 and 55** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,131,016 A to *Greenstein et al.* ("*Greenstein*") in view of "*Handover Delay in Cellular Wireless System*" to *Ulukus et al.* ("*Ulukus*").

In making a proper obviousness rejection under MPEP 706.02(j), the examiner will address the following four steps:

- e) *the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line numbers where appropriate;*
- f) *the difference of differences in the claim(s) over the applied cited references;*
- g) *the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter; and*
- h) *an explanation why one skilled in the art at the time of the invention was made would have been motivated to make the proposed modification.*

As such to **claim 43**, for step (a) *Greenstein* discloses only one base station, see e.g., figure 1.

For step (b) *Greenstein* is silent or deficient to the further limitation receiving a plurality of signals from a plurality of remote base stations.

Ulukus teaches the above limitation in e.g., figure 1.

For step (c), the proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Greenstein* by including more than one base station in the system.

In order to establish a prima facie case of obviousness for step (d), three basic criteria must be met. The three criteria according to MPEP 706.02(j) are as follows:

First there must be some suggestion or modification, either in the reference(s) themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

As such, for step (d) examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the further limitation receiving a plurality of signals from a plurality of remote base stations. In particular, the motivation for modifying the reference or to combine the reference teachings would be motivated to use more than one base station for the purpose of handover. In particular, *Ulukus* cures the above-cited deficiency by providing a motivation found at e.g., page 1370. Second, there would be a reasonable expectation of success since the selection of the base station is also performed using signal strength. Thus the references either in singular or in combination teach the above claim limitation.

As to **claim 46**, see similar rejection to claim 4.

As to **claim 47**, see similar rejection to claim 5.

As to **claim 48**, see similar rejection to claim 6.

As to **claim 51**, see similar rejection to claim 43.

As to **claim 52**, see similar rejection to claim 10.

As to **claim 55**, see similar rejection to claim 13.

9. **Claims 44, 45, 50 and 54** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,131,016 A to *Greenstein et al.* ("*Greenstein*") in view of "Handover Delay in Cellular Wireless System" to *Ulukus et al.* ("*Ulukus*") and "A Strength and SIR Combined Adaptive Power Control for CDMA Mobile Radio Channels" to *Yang et al.* ("*Yang*").

As to **claim 44**, see similar rejection to claim 2.

As to **claim 45**, see similar rejection to claim 3.

As to **claim 50**, see similar rejection to claim 8. In addition, *Ulukus* also teaches using a threshold for handoff, see e.g., left-hand column at page 1370.

As to **claim 54**, see similar rejection to claim 12.

Allowable Subject Matter

10. **Claims 7, 11, 14, 21, 25, 28, 35, 39, 42, 49, 53, 56, 63, 67 and 70** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. **Claims 7, 11, 14, 21, 25, 28, 35, 39, 42, 49, 53, 56, 63, 67 and 70** are allowable over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior art references which teaches a STTD system or transmitting a list of active transmitters that uses transmit diversity where only of the remote transmitters is selected in response to the steps of determining or calculating.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (703) 305-4225. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Derrick W. Ferris
Examiner
Art Unit 2663


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